APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/934,984	08/22/2001	David John Maxwell	01-1021	8270

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EXAMINER
SCUDERI, PHILIP S

ART UNIT	PAPER NUMBER
2153	

DATE MAILED: 10/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

	Application No.	Applicant(s)
Office Action Summary	09/934,984	MAXWELL ET AL.
	Examiner	Art Unit
	Philip S. Scuderi	2153

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE <u>3</u> MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on <u>22 August 2001</u>.

2a)☐ This action is **FINAL**.   2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) <u>1-24</u> is/are pending in the application.

    4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) <u>1-24</u> is/are rejected.

7)☒ Claim(s) <u>1, 7, 8, 10, 14, 20, 21, and 23</u> is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☒ The specification is objected to by the Examiner.

10)☒ The drawing(s) filed on <u>22 August 2001</u> is/are: a)☐ accepted or b)☒ objected to by the Examiner.

    Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

    Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

    a)☒ All   b)☐ Some *   c)☐ None of:

      1.☒ Certified copies of the priority documents have been received.

      2.☐ Certified copies of the priority documents have been received in Application No. _____.

      3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

    * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1)☒ Notice of References Cited (PTO-892)

2)☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)

3)☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date <u>1/29/2002, 2/4/2002</u>.

4)☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.

5)☐ Notice of Informal Patent Application (PTO-152)

6)☐ Other: _____.

DETAILED ACTION

Specification

1.   Applicant is reminded of the proper language and format for an abstract of the disclosure.

2.   The abstract should be in narrative form and generally limited to a single paragraph on a separate sheet within the range of 50 to 150 words. It is important that the abstract not exceed 150 words in length since the space provided for the abstract on the computer tape used by the printer is limited. The form and legal phraseology often used in patent claims, such as "means" and "said," should be avoided. The abstract should describe the disclosure sufficiently to assist readers in deciding whether there is a need for consulting the full patent text for details.

3.   The language should be clear and concise and should not repeat information given in the title. It should avoid using phrases which can be implied, such as, "The disclosure concerns," "The disclosure defined by this invention," "The disclosure describes," etc.

4.   The abstract of the disclosure is objected to because the abstract should be

limited to one paragraph. Correction is required. See MPEP § 608.01(b).

5.   The abstract of the disclosure is objected to it contains the following legal

phraseology often used in patent claims:

- Paragraph 1 line 4 refers to "said determined ratios".

- Paragraph 1 line 4 refers to "said ratios".

- Paragraph 2 line 6 refers to "said port".

Correction is required. See MPEP § 608.01(b).

6.   The title of the invention is not descriptive. A new title is required that is clearly

indicative of the invention to which the claims are directed.

The following title is suggested: Apparatus, Method, and Computer Program for

Detection of Devices on a Computer Network with Similar Network Traffic Profiles.

7.   The disclosure is objected to because of the following informalities:

   • Page 2 line 28 contains the term "realisation" which is a misspelling. The term

      "realization" is recommended.

   • Page 3 line 3 contains the phrase "providesa" which is missing a space. The

      phrase "provides a" is recommended.

Drawings

8.   Figures 1, 2, and 3 should be designated by a legend such as --Prior Art--

because only that which is old is illustrated. See MPEP § 608.02(g). Corrected

drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action

to avoid abandonment of the application. The replacement sheet(s) should be labeled

"Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct

any portion of the drawing figures. If the changes are not accepted by the examiner, the

applicant will be notified and informed of any required corrective action in the next Office

action. The objection to the drawings will not be held in abeyance.

9.   The drawings are objected to because figure 1 lacks sufficient labeling such as

network manager, network call processor, router, server, switch, mouse, client, etc.

Corrected drawing sheets in compliance with 37 CFR 1.121(d) are required in reply to

the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The figure or figure number of an amended drawing should not be labeled as "amended." If a drawing figure is to be canceled, the appropriate figure must be removed from the replacement sheet, and where necessary, the remaining figures must be renumbered and appropriate changes made to the brief description of the several views of the drawings for consistency. Additional replacement sheets may be necessary to show the renumbering of the remaining figures. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Objections

10.   Claims 1 and 14 are objected to because claim 1 line 3 and claim 14 line 2 refer to "the ingress" which lacks antecedent basis. The phrase "an ingress" is recommended. Appropriate correction is required.

11.   Claims 7 and 20 are objected to because claim 7 lines 2-3 and claim 20 lines 2-3 recite the limitation "the second derivative" which lacks antecedent basis. The limitation "a second derivative" is recommended. Appropriate correction is required.

12.   Claims 8 and 21 are objected to because claim 8 lines 2-3 and claim 21 lines 2-3

recite the limitation "the third derivative" which lacks antecedent basis. The limitation "a

third derivative" is recommended. Appropriate correction is required.

13.   Claims 10 and 23 are objected to because claim 10 line 2 and claim 23 line 2

recite the limitation "the boundaries" which lacks antecedent basis. The limitation

"boundaries" is recommended. Appropriate correction is required.

Claim Rejections - 35 USC § 101

14.   35 U.S.C. 101 reads as follows:

> Whoever invents or discovers any new and useful process, machine, manufacture, or composition of
> matter, or any new and useful improvement thereof, may obtain a patent therefor, subject to the
> conditions and requirements of this title.

15.   Claims 12 and 13 are rejected under 35 U.S.C. 101 because the claimed

invention is directed to non-statutory subject matter. A "carrier wave" (claim 12 line 2

and claim 13 line 2) is not a tangible medium. For the remainder of this office action the

examiner will treat the claims under the presumption that the phrase "or embodied in a

carrier wave" (claim 12 line 2 and claim 13 line 2) limitation has been removed.

Claim Rejections - 35 USC § 112

16.   The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of
> making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the
> art to which it pertains, or with which it is most nearly connected, to make and use the same and shall
> set forth the best mode contemplated by the inventor of carrying out his invention.

17.   Claims 1-12 and 14-24 are rejected under 35 U.S.C. 112, first paragraph, as

failing to comply with the written description requirement. The claim(s) contains subject

matter which was not described in the specification in such a way as to reasonably

convey to one skilled in the relevant art that the inventor(s), at the time the application

was filed, had possession of the claimed invention. While specification defines a server

device, nowhere does the specification define a "server-like device".

18.   The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly
> claiming the subject matter which the applicant regards as his invention.

19.   Claims 1-24 are rejected under 35 U.S.C. 112, second paragraph, as being

indefinite for failing to particularly point out and distinctly claim the subject matter which

applicant regards as the invention.

20.   Claim 1 recites the limitation "said determined ratios" in line 5. There is

insufficient antecedent basis for this limitation in the claim. The term ratio in line 3 is

singular.

21.   Claim 2 recites the limitation "the network traffic" in line 3. There is insufficient

antecedent basis for this limitation in the claim.

22.   Claim 7 recites the limitation "the graph" in line 3. There is insufficient

antecedent basis for this limitation in the claim.

23.   Claim 8 recites the limitation "the graph" in line 3. There is insufficient

antecedent basis for this limitation in the claim. Claim 8 recites the limitation "the

second" in line 3. There is insufficient antecedent basis for this limitation in the claim.

24.   Claim 13 contains numerous deficiencies under 35 U.S.C. 112, second

paragraph, the list below provides a number of examples and may not be all inclusive.

Examples of deficiencies include:

- Written in numerous sentences, see line 8+.

- Line 5 uses the acronyms "inInOctets" and "ifOutOctets" without definition in

  the claim render the claim indefinite.

- Line 8 refers to "the first iteration", lacks antecedent basis.

- Line 13 refers to "store", unclear how and where the storing takes place.

- Line 26 refers to "the points", unclear if referring to the points in line 20 or 22.

  Lacks antecedent support.

25.   Claim 14 recites the limitation "said determined ratios" in line 4. There is

insufficient antecedent basis for this limitation in the claim. The term ratio in line 3 is

singular.

26.   Claim 15 recites the limitation "the network traffic" in line 3. There is insufficient antecedent basis for this limitation in the claim.

27.   Claim 20 recites the limitation "the graph" in line 3. There is insufficient antecedent basis for this limitation in the claim.

28.   Claim 21 recites the limitation "the graph" in line 3. There is insufficient antecedent basis for this limitation in the claim. Claim 21 recites the limitation "the second" in line 3. There is insufficient antecedent basis for this limitation in the claim.

29.   Due to the number of 35 U.S.C. § 112 second paragraph rejections, the examiner has provided a number of examples in the above rejection(s), however, the list of rejections may not be all inclusive. Applicant should refer to these rejections as examples of deficiencies and should make all the necessary corrections to eliminate the 35 U.S.C. § 112 second paragraph problems and place the claims in a proper format.

30.   Due to the number of 35 U.S.C. § 112 second paragraph rejections of claim 13 the examiner will not treat claim 13 with respect to prior art, 35 U.S.C. § 102 and 35 U.S.C. § 103.

Claim Rejections - 35 USC § 103

31. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

32. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

33. Claims 1, 2, 3, 4, 12, 14, 15, 16, and 17 are rejected under 35 U.S.C. 103(a) as being obvious over Schenkel et al. (U.S. 5,926,462) hereinafter referred to as Schenkel in view of McKee et al. (U.S. 5,712,981) hereinafter referred to as McKee. Schenkel teaches (claims 1 and 14) a method and apparatus (fig. 1, col. 2 lines 48-50) for detection of devices within a network, said detection method comprising the steps of:

- determining the ingress to egress network traffic ratio for at least some of the devices (col. 2 lines 25-28); and

- selecting the devices on the basis of said determined ratios or a figure derived from said determined ratios (col. 2 lines 29-32).

Schenkel teaches (claims 2 and 15) said method and said apparatus in which each

device is connected to a port of another device and the ingress to egress network traffic

ratio is determined by determining the network traffic through said port (col. 2 lines 25-

28). Schenkel teaches (claims 3 and 16) said method and said apparatus in which said

network traffic ratio through said port is determined using SNMP (col. 11 lines 7-11).

Schenkel teaches (claim 4) said method in which the step of selecting the devices

includes selecting those devices having a value of said determined ratio above a

selected value (col. 2 lines 29-32). Schenkel teaches (claim 17) said apparatus

including means for selecting the devices includes selecting those devices having a

value of said determined ratio above a selected value (col. 2 lines 29-32). Schenkel

teaches (claim 12) a computer program on a computer readable medium loadable into a

digital computer, said computer program comprising software for perfoming the steps of

said method (col. 12 line 55). Schenkel does not disclose expressly a method or

apparatus, as discussed above, which detect server-like devices. McKee teaches a

method for detection of server-like devices within a network, said detection method

comprising the steps of:

- analyzing the traffic data for at least some of the devices (col. 6 lines 48-49);
  and

- selecting the devices on the basis of said traffic data or a figure derived from
  said traffic data (col. 6 lines 49-50).

Schenkel and McKee are analogous are because they are from the same field of

endeavor, network analysis. At the time of the invention it would have been obvious to a

person of ordinary skill in the art to use the method or apparatus as taught by Schenkel

to detect server-like devices on a network as taught by McKee. The motivation for doing

so would have been to obtain a greater understanding of the technical operation of the

network in order to properly manage the network (Schenkel col. 1 lines 15-18 and 38-

57). Therefore, it would have been obvious to combine Schenkel with McKee to obtain

the invention as specified in claims 1, 2, 3, 4, 12, 14, 15, 16, and 17.

34.   Claims 5-11 and 18-24 are rejected under 35 U.S.C. 103(a) as being

unpatentable over Schenkel in view of McKee as applied to claims 1, 2, 3, 4, 12, 14, 15,

16, and 17 above, and further in view of Clarkson et al. (U.S. Pub. 2003/0147353 A1)

hereinafter referred to as Clarkson. Schenkel modified by McKee teaches a method for

detection of server-like devices within a network as recited in claims 1, 2, 3, 4, 12, 14,

15, 16, and 17 for the reasons above, differing from the invention in claims 5-11 and 18-

24 in that their combined teaching lacks the following limitations:

- said method including the step (claim 5) and said apparatus including means

  (claim 18) - of ranking the devices in order of their determined ratios;

- said method in which the selection of server-like devices includes (claim 6)

  and said apparatus including means for (claim 19) - determining

  discontinuities in the values of the determined ratios of the ranked devices;

- said method including the step of (claim 7) and said apparatus including

  means for (claim 20) - nominally plotting the determined ratios of the devices

against the ranked devices and deriving the second derivative of the graph, and using the second derivative to select the server-like devises;

- said method including the step of (claim 8) and said apparatus including means for (claim 21) - nominally plotting the determined ratios of the devices against the ranked devices and deriving the third derivative of the graph, and using the second and third derivatives to select the server-like devices;

- said method including the step of (claim 9) and said apparatus including means for (claim 22) - using the second and third derivatives to divide the devices into groups and selecting one or more of the groups of devices as server-like devices;

- said method (claim 10) in which devices are divided into groups by determining the boundaries of the groups as points where the second derivative is zero and the third derivative is less than zero;

- said apparatus including means for (claim 23) dividing the devices into groups by determining the boundaries of the groups as points where the second derivative is zero and the third derivative is less than zero;

- said method including the step of (claim 11) and said apparatus including means for (claim 24) - selecting one or more of the groups of devices as server-like devices comprises selecting one of said points as a cut-off point beyond which all devices are considered as exhibiting server-like behavior.

Clarkson discloses a method for optimization of networks comprising a derivative based network analysis (paragraph 0183). It would have been obvious to one of ordinary skill in the art of while performing a derivative based network analysis to do the following:

- (claims 5 and 18) rank the devices in order of their determined ratios;

- (claims 6 and 19) select the server-like devices includes determining discontinuities in the values of the determined ratios of the ranked devices;

- (claims 7 and 20) nominally plot the determined ratios of the devices against the ranked devices and derive the second derivative of the graph, and use the second derivative to select the server-like devises;

- (claims 8 and 21) nominally plot the determined ratios of the devices against the ranked devices and derive the third derivative of the graph, and use the second and third derivatives to select the server-like devices;

- (claims 9 and 22) use the second and third derivatives to divide the devices into groups and select one or more of the groups of devices as server-like devices;

- (claims 10 and 23) divide devices into groups by determining the boundaries of the groups as points where the second derivative is zero and the third derivative is less than zero; and

- (claims 11 and 24) select one or more of the groups of devices as server-like devices by selecting one of said points as a cut-off point beyond which all devices are considered as exhibiting server-like behavior.

Schenkel modified by McKee and Clarkson are analogous art because they are from

the same field of endeavor, network analysis. At the time of invention it would have

been obvious to a person of ordinary skill in the art to use the derivative based network

analysis as taught by Clarkson to select server-like devices on a network as taught by

Schenkel modified by McKee. The motivation for doing so would have been to

determine a ratio of ingress to egress network traffic at which any network device with a

greater ingress to egress ratio is considered server-like. Therefore, it would have been

obvious to combine Schenkel modified by McKee with Clarkson to obtain the invention

as specified in claims 5-11 and 18-24.

Conclusion

35.   Any inquiry concerning this communication or earlier communications from the

examiner should be directed to Philip S. Scuderi who can be reached via email at

philip.scuderi@uspto.gov or via telephone as of 11/2/2004 at (571) 272-5865. The

examiner can normally be reached on Monday-Friday 8am-5pm.

36.   If attempts to reach the examiner by telephone are unsuccessful, the examiner's

supervisor, Glenton B. Burgess can be reached on (703) 305-4792. The fax phone

number for the organization where this application or proceeding is assigned is 703-

872-9306.

37.   Information regarding the status of an application may be obtained from the

Patent Application Information Retrieval (PAIR) system. Status information for

published applications may be obtained from either Private PAIR or Public PAIR.

Status information for unpublished applications is available through Private PAIR only.

For more information about the PAIR system, see http://pair-direct.uspto.gov. Should

you have questions on access to the Private PAIR system, contact the Electronic

Business Center (EBC) at 866-217-9197 (toll-free).

PSS

Dung C. Dinh
Primary Examiner